

In Re Application of:
Ronald P. Schmidt

Serial No. 09/761,301

AMENDMENT TO THE CLAIMS

Please amend the claims as set forth below:

1-12. (Previously Canceled)

13. (Previously Amended) A method of forming a structural assembly, comprising the step of:

affixing a first pre-cured assembly to a 3-D woven textile pre-form impregnated with an uncured resin, an adhesive film being located between said first pre-cured assembly and said pre-form, said pre-form having a base and two legs extending from the base, said first pre-cured assembly being located on a side of the base opposite the legs;

affixing a second pre-cured assembly between said legs of said 3-D woven textile pre-form with an additional adhesive film being located between said second pre-cured assembly and inner surfaces of said legs of said pre-form;

curing said resin and said adhesive films to form the structural assembly; wherein

said curing is performed by placing a leg side of a first pressure intensifier of flexible material against an exterior surface of one of said legs and placing a base side of said first pressure intensifier against said base, and placing a leg side of a second pressure intensifier of flexible material against an exterior surface of the other of said legs and placing a base side of said second pressure intensifier against said base, each of said pressure intensifiers having an exterior side that extends from an edge of said base side to an edge of said leg side; and

inserting said first and second pre-cured assemblies along with said pre-form, adhesive films, and pressure intensifiers into a vacuum bag, then evacuating the vacuum bag, causing the pressure intensifiers to press said base and legs of said pre-form against portions of said pre-cured assemblies.

In Re Application of:
Ronald P. Schmidt

Serial No. 09/761,301

14. ~~Canceled (Previously Amended) The method of Claim 13, wherein said base side and said leg side of each of said pressure intensifiers are at right angles to each other, and each of said pressure intensifiers is triangular in cross section.~~

15. (Previously Amended) The method of claim 13, wherein said first pre-cured assembly and said second pre-cured assembly are pre-cured, laminated composite structures.

16. (Previously Amended) The method of Claim 13, wherein said step of curing is implemented with heat and pressure.

17. (Previously Amended) The method of claim 13, wherein said base side and said leg side of each of said pressure intensifiers are equal in length .

18. (Previously Amended) The method of claim 13, wherein said exterior side of each of said pressure intensifiers is concave.

19. (Previously Amended) The method of claim 13, wherein said step of curing is implemented with an E-Beam resin system.

20. (Previously Amended) The method of claim 13, further comprising the step of applying a composite overwrap ply on said exterior surfaces of said legs of said pre-form prior to pressing said leg sides of said pressure intensifiers against said legs.

21. (Previously Canceled)

22. (Previously Amended) The method of claim 13, wherein said pressure intensifiers are rubber.

In Re Application of:
Ronald P. Schmidt

Serial No. 09/761,301

23. (Currently Amended) The method of claim 13, wherein a plane line extending normal to said exterior side of each of said pressure intensifiers passes through a corner formed by a junction of said base with one of said legs.

24. (Previously Amended) A method of forming structural assemblies with pre-cured laminated composite structures, comprising the steps of:

providing a woven textile pre-form with a base and a pair of legs extending from the base at a 90 degree angle, the pre-form being impregnated with an uncured resin;

affixing a first adhesive film between a first pre-cured laminated composite structure and the base of the pre-form;

affixing an additional adhesive film between one side of a second pre-cured laminated composite structure and an inner surface of one of the legs of said 3-D woven textile pre-form, and inserting an additional adhesive film between an opposite side of said second pre-cured laminated composite structure and an inner surface of the other of said legs; then

providing a pair of flexible pressure intensifiers, each being triangular in cross section, and placing one of said pressure intensifiers in contact with said base and an exterior surface of one of said legs and the other of said pressure intensifiers in contact with said base and an exterior surface of the other of said legs; then

enclosing said first and second pre-cured laminated composite structures, said pre-form and said pressure intensifiers within a vacuum bag and evacuating the bag; then

curing said adhesive films and said 3-D woven textile pre-form to form the structural assemblies.

25. ~~Canceled(Previously Amended) The method of claim 24, wherein said each of said pressure intensifiers has a base side that contacts said base of said pre-form, a leg side that contacts said exterior surface of one of said legs of said pre-form and a concave exterior side that extends from an edge of said base side to an edge of said leg side.~~

In Re Application of:
Ronald P. Schmidt

Serial No. 09/761,301

26. (Currently Amended) The method of claim 24, wherein each of said pressure intensifiers has a base side that contacts said base of said pre-form, a leg side that contacts said exterior surface of one of said legs of said pre-form, and an exterior side that extends from an edge of said base side to an edge of said leg side; and wherein

a plane normal to said exterior side bisects a corner defined by an intersection of said base of said pre-form and one of said legs,

27. (Previously Amended) The method of claim 24, wherein said step of curing is implemented by heating the vacuum bag.

28. (Previously Amended) The method of claim 24, wherein said step of curing is implemented with an E-Beam cure resin system.

29. (Previously Amended) The method of Claim 24, further comprising the step of applying a composite overwrap ply on said exterior surfaces of said legs of said pre-form

30. (Previously Canceled)

31. (Previously Canceled)

32. (Currently Amended) The method of Claim 24, wherein each of said pressure intensifiers has a base side that contacts said base of said pre-form, a leg side that contacts said exterior surface of one of said legs of said pre-form, and an exterior side that extends from an edge of said base side to an edge of said leg side; and wherein.

said base side and said leg side of each of said pressure intensifiers are of the same length.

33. (Previously Canceled)

In Re Application of:
Ronald P. Schmidt

Serial No. 09/761,301

- 34. (Previously Canceled)
- 35. (Previously Canceled)
- 36. (Previously Canceled)
- 37. (Previously Canceled)
- 38. (Previously Canceled)
- 39. (Previously Amended) The method of Claim 24, wherein said legs and said base of said pre-form have tapered edges.
- 40. (Previously Canceled)
- 41. (Previously Canceled)
- 42. (Previously Canceled)
- 43. (Currently Amended) The method of Claim 24, ~~wherein said~~ wherein said pressure intensifiers are formed of rubber.
- 44. (Previously Canceled)
- 45. (Previously Amended) The method of Claim 13, wherein said pre-form has tapered edges.

In Re Application of:
Ronald P. Schmidt

Serial No. 09/761,301

46. (Previously Amended) A method of forming structural assemblies with pre-cured laminated composite structures, comprising the steps of:

providing a woven textile pre-form with a base and a pair of legs extending from the base at an angle, defining a slot between them and corners at intersections of the legs and the base, the pre-form being impregnated with an uncured resin;

affixing a first adhesive film between a pre-cured laminated composite first structure and the base of the pre-form on a side opposite the legs;

inserting a pre-cured laminated composite second structure into the slot with additional adhesive films between inside surfaces of the legs and the second structure;

providing a pair of flexible pressure intensifiers, each of the pressure intensifiers being a three-sided polygon in cross-section, having two straight inner sides intersecting each other, defining a corner portion and an exterior side that extends between edges of the inner sides, and placing the corner portion of each in contact with one of the corners formed by the base and the legs; then

inserting the first and second structures, along with the pre-form, adhesive films and pressure intensifiers into a vacuum bag; and

evacuating the vacuum bag and applying heat to cure said adhesive films and pre-form to form the structural assemblies.

47. (Added) The method of Claim 13, wherein said base side and said leg side of each of said pressure intensifiers are at right angles to each other, and each of said pressure intensifiers is triangular in cross section.

48. (Added) The method of claim 24, wherein said each of said pressure intensifiers has a base side that contacts said base of said pre-form, a leg side that contacts said exterior surface of one of said legs of said pre-form and a concave exterior side that extends from an edge of said base side to an edge of said leg side.